



Arizona-Mexico Border Program

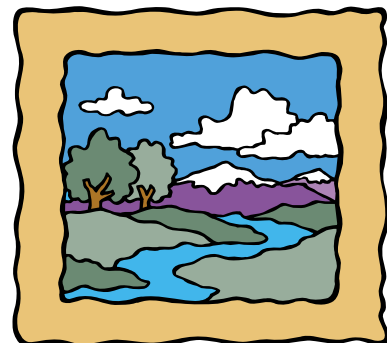
AUGUST 2003

AMBOS NOGALES BINATIONAL AIR MONITORING PROJECT

ADEQ and Mexico's SEMARNAT collaborated on a comprehensive binational air quality study in Nogales, Arizona and Nogales, Sonora (Ambos Nogales) from 1994 to 1999. The work was funded by EPA and implemented by ADEQ staff and consultants. The study was pioneering in scope at the binational level and was designed to address the human health effects of emissions and atmospheric transport of hazardous air pollutants (HAPs) and particulate matter (PM). Comprehensive data and information gathering efforts included air sample collection, meteorological monitoring, air emissions inventories, atmospheric simulation models and human health risk assessment. A summary of the findings of this study can be found in the "Ambos Nogales Binational Air Quality Study – Citizen's Summary," which was presented to the community in August of 1999. This report is available at ADEQ's Southern Regional Office located in Tucson, Arizona and through www.adeq.state.az.us. ADEQ continues to monitor the air for PM_{10} and $PM_{2.5}$ in Ambos Nogales, which were demonstrated to be the main risk factors in local air quality.

DOUGLAS, ARIZONA - AGUA PRIETA, SONORA BINATIONAL AIR MONITORING PROJECT

ADEQ is currently conducting a binational air quality study in the Douglas, Arizona-Agua Prieta, Sonora area. The study is being funded by EPA and includes four components: one-year ambient air sampling/monitoring (completed in March 2000); atmospheric emissions inventory (completed in June 2002); atmospheric simulation models; and a human health risk assessment. Study completion is projected for the end of 2003.



AMBOS NOGALES BINATIONAL AIR QUALITY EDUCATIONAL OUTREACH CAMPAIGN

Using the findings of the Ambos Nogales Air Quality Study as its foundation, the department initiated an outreach campaign to address particulate air pollution in Nogales, Arizona and Nogales, Sonora in 2000. Our outreach effort is binational since the study concluded that approximately 80% of the particulate sources are located in Mexico. Nogales, Arizona is a non-attainment area for PM_{10} . Using limited EPA funds, the department initiated this 12 to 18 month effort to increase public awareness and in an attempt to curtail air polluting activities by the public. Additional funding to support this activity has been received from the EPA and the National Oceanic and Atmospheric Administration. This effort includes a parallel initiative that brings stakeholders together to identify large-scale community based initiatives to address difficult issues such as the need for road paving projects in Mexico. The binational governmental dialogue is undertaken in cooperation with the US and Mexico Consuls located in Ambos Nogales. This consular-led forum is called the Border Liaison Mechanism (BLM).

YUMA/SAN LUIS, ARIZONA - SAN LUIS RÍO COLORADO, SONORA BINATIONAL AIR MONITORING

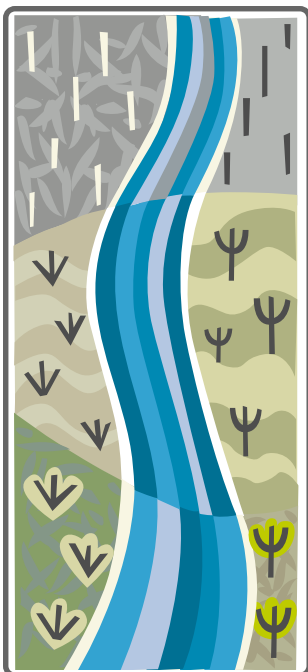
A binational air monitoring project is in the early planning phase for the area of Yuma-Somerton-San Luis, Arizona and San Luis Río Colorado, Sonora. Similar to the Ambos Nogales and the Douglas-Agua Prieta projects, the study will consist of four separate components: one-year air sampling/monitoring; atmospheric emissions inventory; atmospheric simulation models; and, human health risk assessment.

AMBOS NOGALES BINATIONAL SANITARY FACILITIES PLANNING

A series of activities are being undertaken by the US and Mexico focusing on sanitation problems in the Ambos Nogales region. Facility planning is still ongoing in Sonora. Evaluation of designs continues for planned improvements of the International Wastewater Treatment Plant and the new International Outfall Interceptor that delivers wastewater from Mexico to the international treatment plant located in Arizona.

NOGALES WASH JOINT US/MEXICO GROUNDWATER MONITORING

A joint US-Mexico groundwater quality study was implemented along the Nogales Wash to collect reliable soil and groundwater quality data from the unsaturated zone and the alluvial aquifer along the wash. The wash is the main drainage for Nogales, Arizona, and Nogales, Sonora and runs through the middle of both communities. The groundwater flow in the general area is to the north. Data collection was to document whether or not surface activities and discharges to Nogales Wash have significantly affected groundwater quality. The monitoring system included 13 ground water monitoring wells within approximately five miles north and south of the international boundary. The project results indicated the presence of PCE in the groundwater exceeding Mexico's drinking water standards in monitor wells in Nogales, Sonora. The spatial distribution of PCE detected in groundwater wells located in Nogales, Sonora suggests the existence of a contaminant plume of PCE in the groundwater, which has also been detected in a monitor well at the international border on the Arizona side. Additionally, low levels of PCE below the Arizona aquifer water quality standards have been detected in monitoring wells in Arizona. A report of this study is available through www.ibwc.state.gov. During 2002, the binational groundwater monitoring wells located in Arizona were sampled twice and although low levels of PCE were still detected in some of the wells, they are below the Arizona AWQS.



WASTEWATER PRETREATMENT PROGRAM FOR NOGALES, SONORA

ADEQ and the state of Sonora's Drinking Water and Sewage Commission (COAPAES) signed a memorandum of understanding (MOU) on June 29, 2001, to formalize interagency collaboration in pursuit of an industrial wastewater pretreatment program for Nogales, Sonora. For protection of both water supplies and the infrastructure investments that will be made for the Nogales International Wastewater Treatment Plant located in Nogales, Arizona, the two states will cooperate on the development of a program to monitor and reduce the levels of pollutants present in industrial wastewater in Nogales, Sonora. Such a program is essential for the proper functioning of wastewater treatment plants. The joint activities include water quality sampling, laboratory analytical support, training and visits to the ADHS laboratory and Arizona communities with established pretreatment programs. In October 2002, an industrial pretreatment training workshop was provided by ADEQ, the City of Phoenix and Gateway Community College for COAPAES and the border communities of Arizona and Sonora.

ARIZONA - SONORA WATER AND WASTEWATER INFRASTRUCTURE PLANNING AND CONSTRUCTION

A collective effort is underway to upgrade the drinking water and wastewater systems in the border areas of Arizona and Sonora. Master planning for many border communities has already been accomplished and construction of new facilities begun. Other communities are still in the planning process. Long-term project financing remains the largest impediment for system improvements. Federal funding is available for certified projects that demonstrate health and environmental improvements as well as financial sustainability. Projects are underway in the Arizona communities of Naco, Bisbee, Nogales, Patagonia, Somerton, Yuma and Gadsen. The department also assesses design plans for infrastructure projects in Mexico that have a transboundary aspect.

LOWER COLORADO RIVER BINATIONAL PESTICIDE SAMPLING

A binational project was implemented for monitoring the quality of the Colorado River at the discharge point into Mexico. Pesticides have been cited as one of the constituents of concern. ADEQ participated in a one-year sampling program (sediments, water and fish) with the IBWC for the Colorado River area described above. A report of the findings is pending development by the IBWC and will be available at www.ibwc.state.gov.



NORTHEASTERN SONORA - SOUTHEASTERN ARIZONA WATER QUALITY MONITORING PROJECT

ADEQ has been working with the state of Sonora and the communities of Agua Prieta, Cananea and Naco, Sonora, and the Border Ecology Project in the Northeastern Sonora Water Monitoring Project since 1998. ADEQ has provided laboratory services support for some of the sampling that was done and has assisted in laboratory information exchange between the University of Sonora laboratory and the Arizona Department of Health Services laboratory. The information that results from the monitoring project is useful in the evaluation of potential environmental impacts on the San Pedro River, a binational river with headwaters near Cananea, Sonora. On the US side, a large portion of the river area immediately north of the international boundary, has been designated a protected natural area. A complementary effort is being spearheaded by ADEQ on the US side of the border in the general vicinity of Douglas, Naco, Bisbee and the San Pedro River. Groundwater flows generally to the south. Project Phase I and II have concluded. Low levels of VOCs were detected in a drinking water well in Agua Prieta, Sonora located very close to the international border. Soil gas surveys were performed in the area as Project Phase III, to find potential sources of VOCs. Additional groundwater investigations will be proposed by the project participants in order to gather important hydrological data.

WATER QUALITY MONITORING IN TRANSBOUNDARY WATERSHEDS

Based on the success of the Northeastern Sonora Water Quality Project, ADEQ signed a memorandum of understanding with the University of Sonora (UNISON) on June 29, 2001, to expand the geographical scope of these joint water quality monitoring activities. Under this agreement, ADEQ and the state of Sonora will collaborate on water quality sampling activities and studies in the transboundary portions of binational watersheds along the entire Arizona-Sonora border. The binational surface water basins may include the San Pedro River, Río Yaqui (Whitewater Draw), Santa Cruz River and the Lower Colorado River. ADEQ will also help organize and facilitate site visits between UNISON and the ADHS laboratory. The purpose of this technology transfer opportunity is to present UNISON with technologies and options for additional analytical capabilities. These collaborative efforts will help ensure the safety and long-term protection of water quality that is needed for our rapidly growing border communities.

BINATIONAL EMERGENCY RESPONSE/ CONTINGENCY PLAN FOR SISTER CITIES

ADEQ supported EPA-led efforts to develop joint emergency response and contingency plans for the industrialized sister city communities along the Arizona-Sonora border to provide additional protection against the risks of a significant environmental accident. There are now four sister city pairs that have executed these binational plans, Ambos Nogales, San Luis-San Luis Río Colorado, Douglas-Agua Prieta and Cochise County-Naco. A Binational Emergency Planning Committee (BEPC) has now been created for the sister cities of Ambos Nogales under the auspices of the consular-led Border Liaison Mechanism (BLM).

ENVIRONMENTAL ENFORCEMENT TRAINING AND COOPERATION WITH MEXICO

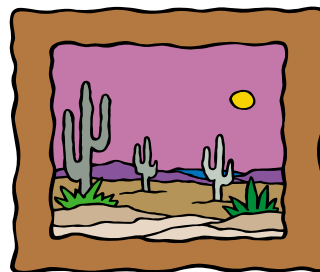
The national sovereignty of the US and Mexico creates unique situations in which environmental violations may occur. International cooperation is vital to prevent the border from serving as a shield for environmental crimes and other violations. ADEQ cooperates with US and Mexican authorities to help clarify the specific nature of environmental irregularities in the transboundary setting. Close cooperation with the US Customs Service can help ensure compliance with applicable federal and state laws in order to protect the public from chemical emergency incidents. Binational training events are also organized to address environmental regulations, sampling events and numerous other technical activities involving hazardous materials and environmental crimes.

ARIZONA - MEXICO COMMISSION

ADEQ, in collaboration and cooperation with Sonora's Secretariat for Urban Infrastructure and Ecology (SIE) and other partnerships, has enjoyed very significant successes and progress on environmental issues by working cooperatively with support from the Offices of the Governor of Arizona and the Governor of Sonora. ADEQ serves as co-chair of the environment committee for this governor-led forum.

THE AMIGO PROGRAM

The AMIGO program (the Arizona Mexico International Green Organization) is designed to generate partnerships leading to voluntary pollution prevention activities among border industries in Arizona and Sonora. The focus is to bring Arizona and Mexico industries closer together to share technologies that reduce waste and pollution while increasing profits, worker safety and environmental health. Governments on both sides of the border serve as industry-to-industry matchmakers to promote international private sector collaboration while providing guidance, information and general support. The governors of Arizona and Sonora annually present awards to border industries with exemplary accomplishments for environmental protection while participating in the AMIGO program. These awards are presented during the Arizona-Mexico Commission conference.



TEN STATES' RETREAT

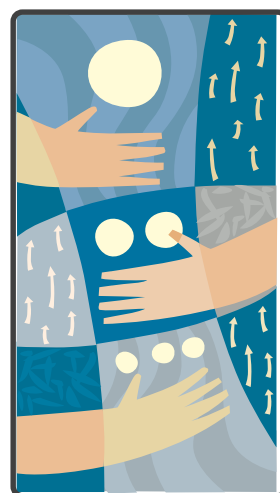
The overall objective of the Ten States' Retreat is to strengthen relationships among state environment leaders on the US-Mexico border. The secretaries of the environment from the ten US and Mexican border states of Arizona, Baja California, California, Chihuahua, Coahuila, New Mexico, Nuevo León, Sonora, Tamaulipas and Texas, have created a network that conveys a unified voice on policy issues affecting the shared border environment. This organization has been supported since its inception in 1996 by the Western Governors' Association (WGA) which in turn, supports the environment work table of the Border Governors' Conference (BGC).

US-MEXICO BORDER 2012 ENVIRONMENTAL PROGRAM

Border 2012 is a 10-year, binational, results-oriented environmental program for the U.S.-Mexico border region, which has been developed by the EPA, SEMARNAT, the U.S. Department of Health and Human Services, Mexico's Secretaría de Salud, the U.S. border Tribes, and the environmental agencies from each of the ten border states. Implemented under the La Paz Agreement, it succeeds Border XXI, a five-year program that ended in 2000. Border 2012's focus is to address environmental issues at the local level by decentralizing the decision-making and priority-setting processes, with implementation driven by four Regional Workgroups, three Border-wide Workgroups and three Policy Forums. The four Regional Workgroups (California-Baja California; Arizona-Sonora; New Mexico-Texas-Chihuahua; and Texas-Coahuila-Nuevo Leon-Tamaulipas) will deal in a multi-disciplinary manner with specific environmental issues affecting particular sub-regions. The three Border-wide Workgroups will address binational and transboundary aspects of environmental health, emergency preparedness and response, and cooperative enforcement and compliance. The three Policy Forums will focus on broad issues concerning air and water quality, and the effective management of hazardous and solid waste and toxic substances. Task Forces will be created to implement projects at the local level consistent with the needs of the region and the goals of the program.

GOOD NEIGHBOR ENVIRONMENTAL BOARD

The Good Neighbor Environmental Board (GNEB) is an independent federal advisory committee whose mission is to advise the U.S. President and Congress on good neighbor practices along the U.S. border with Mexico. Recommendations developed by the Board are submitted in an annual report and emphasize environmental and infrastructure needs of the border region. Board members are appointed by the EPA Administrator. The current Chair of the Board is Plácido dos Santos, ADEQ's Border Programs Manager.



BORDER GOVERNORS' CONFERENCE

The BGC began in 1980 and provided a coordination mechanism for the governors from each of the ten U.S.-Mexico border states to discuss issues of common interest and concern. In 1987, the BGC began formulating joint declarations developed by each of the organization's work tables, which are: agriculture, border crossings, economic development, education, environment, health, special issues and tourism. Recommendations from each of the work tables are approved by the governors before they are formalized in a document. Implementation plans are developed and enacted upon during the year, with progress reported on the following year. The BGC co-chairs are the governor of the current year host state and the governor of the state that will host the conference the following year, with one always being from a U.S. state and the other from a Mexican state. This leadership model carries through to the work tables. Co-chairs and work table leaders are selected at the annual conference through a consensus. At the 2002 BGC hosted by Arizona, it was agreed that a new work table would be established to address energy issues and that transboundary water related issues would be addressed by the environment work table. Arizona is the U.S. co-chair for the environment work table for 2003 and 2004.

Key to Acronyms and Abbreviations in Alphabetical Order:

ADEQ	=	Arizona Department of Environmental Quality
ADHS	=	Arizona Department of Health Services
AMC	=	Arizona-Mexico Commission
AMIGO	=	Arizona Mexico International Green Organization
AWQS	=	Aquifer Water Quality Standards
BEPC	=	Binational Emergency Planning Committee
BGC	=	Border Governors' Conference
BLM	=	Border Liaison Mechanism
COAPAES	=	Comisión de Agua Potable y Alcantarillado del Estado de Sonora (State of Sonora's Drinking Water and Sewage Commission)
EPA	=	Environmental Protection Agency of the United States
GIS	=	Geographic Information System
IBWC	=	International Boundary and Water Commission
IOI	=	International Outfall Interceptor
HAPs	=	Hazardous Air Pollutants
PCE	=	Perchloroethylene (also known as Tetrachloroethylene)
PM / PM ₁₀ / PM _{2.5}	=	Particulate Matter / ≤ 10 Microns in Size / ≤ 2.5 Microns in Size
SEMARNAT	=	Secretaría de Medio Ambiente y Recursos Naturales de México (Mexico's Secretariat for the Environment and Natural Resources)
SIUE	=	Secretaría de Infraestructura Urbana y Ecología de Sonora (Sonora's Secretariat for Urban Infrastructure and Ecology)
UNISON	=	Universidad de Sonora (University of Sonora)
US	=	United States
WGA	=	Western Governors' Association